

gradations between them, just as we have seen to be the case in the Eocene species, and, as pointed out at the beginning of this article, long known in many Jurassic species also. The objection, therefore, had it been considered sound, might have been raised many years ago; but the facts are much what we might expect on any hypothesis of the origin of *Balanocrinus* from *Isocrinus*, and are certainly consistent with the special hypothesis here advocated of the multiple origin of *Balanocrinus* from successive species or species-groups of *Isocrinus*. It may be impossible to assign an isolated ossicle to its correct genus, but the stem must be considered as a whole.

Admitting the polyphyletic origin of the genus *Balanocrinus* as hitherto conceived, our future task is to divide it into sections, each of which may be regarded as a subgenus of *Isocrinus* if not as a full genus. One such section will undoubtedly comprise the forms herein discussed. In that event the validity of *Balanocrinus* itself will not be settled by the variations or growth-stages of this Cretaceous-Tertiary assemblage, but by the relationships of the genotype, the Oxfordian *Balanocrinus subteres*; and "that is another story."

XLIX.—*New Indo-Malayan Lepidoptera.*

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Family Euplœidæ.

Salpinx ceramica, nov.

♂. Upperside dark olive-brown, the outer margins paler and somewhat ochreous-tinted: fore wing with a rather large and round bluish spot below the middle of vein 2, with a smaller one immediately below it and seven submarginal bluish spots decreasing in size from the apex downwards: hind wing with the costal space pale; a large ochreous-grey patch covering the upper half of the cell and a space above it, a postdiscal row of obscure dots and another submarginal, the uppermost one most pronounced. Underside: fore wing coloured as above; a very large ochreous-grey hinder marginal space which extends to the median vein and a little beyond vein 2; a large round ochreous-grey spot below vein 3 near its base, a small one above it, and a whorl of four

small spots above curling inwards to near the costa ; a sub-marginal row of spots, decreasing in size hindwards, and a marginal row of small spots, the first six from the apex in pairs : hind wing darker than the fore wing, uniform in colour, some small dots at the base ; a submarginal complete row of small spots and some spots close to the margin, obsolete on the upper half.

♀. Somewhat paler in colour, the spot-markings above and below larger, those on the underside very prominent.

Expanse of wings, ♂ $3\frac{2}{10}$, ♀ $3\frac{1}{2}$ inches.

Hab. Ceram Island.

The fore wings in the male are shorter and more rounded than is usual in the genus *Salpinx*, giving the insect the appearance of a *Calliploea*.

Family Nymphalidæ.

Cyrestis atosia, nov.

♂. Much the same pattern as *irmæ**, Forbes, from Sumatra ; belongs to the *mænalis* group, represented in the Indian region by the *nivea*† group figured by Bingham in the 'Fauna of British India,' Butterflies, ii. p. 351 (1905) ; but Bingham has figured *nivalis*‡ of Felder, from Java, instead of *nivea*, a perfectly distinct species, with a broad black costal border from the base to the apex of the fore wing, type in Coll. Rothschild. In *atosia* the band is similar, but the transverse lines are dark chocolate-brown, the costal band of the fore wing is complete and contains three white spots—one subapical, the others on each side of it ; the marginal band is broader, its inner edge is bent in a curve between veins 5 and 3, the edges of the bend connected together by a thick transverse line, and there is a white streak near the hinder angle above the orange-ochreous patch ; the hind wing is marked much as in *nivea*, except that the white streak in the marginal band from the apex downwards is much narrower, the transverse lines on both wings thicker and more prominent, the short bands downwards from the costa of fore wing broader and more complete, the outer one fining to a point on vein 4, the middle one across the cell, and a subbasal one which crosses the wing and is continued across the hind wing to the orange-ochreous anal patch ; the

* 'A Naturalist's Wanderings in the Eastern Archipelago,' p. 274 (1885).

† Zinken-Sommer, Nova Acta Acad. Leop.-Car. 1831, p. 138, pl. xiv. fig. 1.

‡ Reise Nov. Lep. 1886 p. 414.

pattern of both wings much resembles that of *irmae*, but the coloration of the bands and lines in that species is much broader and more pronounced and nearly pure black.

Expanse of wings 2 inches.

Hab. Maymyo, Burma (*Graham*).

Neptis ancus, nov.

♂. Above and below closely resembling *N. clinia*, Moore, from the Andamans. Upperside with the subapical spots larger, the lower discal spots also much larger, and more uniform in size with those of the transverse band of the hind wing, which is nearly uniform in its entire length, and the submarginal band of the hind wing is pure white and well pronounced. On the underside the cell-streak on fore wing is narrower and the subapical spots are joined together.

Expanse of wings $1\frac{8}{10}$ inch.

Hab. Toungoo, Burma (*Graham*).

Neptis margala, nov.

♂. Upperside black, markings pure white: fore wing with the usual cell-streak running close along the median vein broken at the end, then continued in a narrow spear-shaped form to nearly halfway between the cell-end and the outer margin; two large elongated subapical spots, the upper one the larger; a large round spot in the lower disc, a smaller one below it, inwards; a submarginal line of disconnected lunular marks, the fifth from the costa obliquely placed, a thin line between this and the outer margin, and some white on the black cilia: hind wing with the costal space narrowly white; a broad pure white even band across the wing (with the veins running through it) a little before its middle and in a line with the two lower discal spots of the fore wing; a submarginal thin and even grey band, an indistinct grey line halfway between this and the white band, and another close to the margin. Underside very beautifully marked, the ground-colour uniform dark chocolate-brown, all the markings pure white and clearly cut: fore wing with an unbroken broad streak in and beyond the cell, thickening outwards and rounded at the end, which is then pointed; a thin streak above it ending above the cell-end; the subapical and lower discal spots and marginal lunules and line as above, but the spots are much larger and the lunules and marginal line much thicker, followed by a series of lunular marks close to the margin; the cilia also streaked with white: hind wing with a broad costal streak from the base, narrowing and

ending in a point a little beyond the middle of the costa; a broad and even transverse band, broader than it is on the upperside, a submarginal band about half as broad, and thick transverse lines on each side of it, the entire wing being more white than brown; a faintly indicated white marginal line.

Expanse of wings 2 inches.

Hab. Borneo.

Allied to nothing I know of.

Pantoporia mera, nov.

♂. Belongs to the *inara* group, is smaller, the fore wing shorter, the outer margin is less concave, the pattern on the upperside is very similar, but the cell-streak is more attenuated, the white spot in it smaller, the orange submarginal band incomplete, narrower at the apex, then broken, a spot in continuation on the middle, and faint indications of a grey line downwards to the hinder angle. The underside, however, is very different to the underside of *inara*, especially on the hind wing, the middle white band being more even, not attenuated to a point at the abdominal fold as it is in *inara*; the black discal row of spots is absent or only very faintly indicated, and the white postdiscal band is broader.

Expanse of wings $2\frac{2}{10}$ inches.

Hab. Borneo.

Family Hesperidæ.

Subfamily *ASTICTOPTERINÆ*.

Genus *TECUPA*, nov.

Forewing: vein 12 ends on costa opposite the end of the cell, 11 evenly free from 12, emitted one-third from upper end of cell, 10 from near the end; 9, 8, 7 emitted close together at and round the end; discocellulars faint, inwardly oblique, 5 from the middle, 3 from one-fourth before lower end of cell, 2 from before the middle; costa evenly and highly arched, apex subacute, outer margin convex below the apex, then obliquely straight to the hinder angle. Hind wing: vein 8 much bowed, ends near the apex of the wing; cell short and broad, less than half the length of the wing; vein 7 from upper end of cell; discocellulars obsolete; vein 5 faint, from the middle; 3 from lower end of cell, 2 from near the end; costa and outer margin evenly rounded; palpi porrect, third joint thick, produced and obtuse, the entire palpi thickly covered with long bristly hairs; antennæ

slender, club gradual, pointed and slightly bent, about half the length of the costa of fore wing; legs slender and naked; abdomen slender, extending a little beyond the wings.

Type, *T. curiosa*, mihi.

Tecupa curiosa, nov.

♂. Chocolate-black, very dark and very black in some lights and above and below very uniform in colour, with the veins above and below rather prominent. On the underside the colour is slightly paler, palest on the outer and hinder margins of the fore wings.

Expanse of wings $2\frac{1}{2}$ inches.

Hab. Naga Hills.

A very curious-looking Hesperid; three male examples received from Major Graham's collection as *Watsoniella swinhoei*, Elwes*, but is certainly generically quite different.

Family Arctiidæ.

Amsacta annamensis, nov.

♂. Pure white, antennæ and palpi above black; palpi beneath, pectus, fore legs, top of head, and shoulders scarlet; mid and hind legs white, with black and scarlet stripes; tarsi black, ringed with white; collar and costa of fore wing scarlet; fore wing with a small black dot at upper end of cell, hind wing with a small black spot at lower end of cell; in one example there is a black spot on the outer margin above the middle; thorax with a small black dot in front on each side; abdomen dark yellow, with black segmental bands, with black spots in the middle of the first three and last bands and black lateral stripes. Underside: body white; wings as above, but there is a small black subbasal spot on each wing.

Expanse of wings 2 inches.

Hab. Hué, Annam.

Somewhat resembles Hampson's figure of *Amsacta flavimargo* † from Bhamo, Burma, the unique type in Mus. Genova, but there are many points of difference, besides which the antennæ have not got white tips and the abdomen is yellow, not scarlet as stated in the text, though yellow in the plate; it also resembles a spotless *lactinea* of Cramer.

* Trans. Zool. Soc. 1897, p. 220, pl. xx. fig. 6.

† 'Lepidoptera Phalænæ,' iii. p. 327, pl. xlvi. fig. 14.

Amsacta barbara, nov.

♀. Antennæ and palpi black, and legs with black and white and crimson stripes; tarsi uniformly black; head, thorax, and wings above pure white; an ochreous-grey stripe on top of head, another on the collar: fore wing with a thin costal pinkish stripe; a black spot on the upper and lower ends of the cell, two black spots close above vein 1, subbasal and postmedial: hind wing with a large black spot at upper end of cell: abdomen above crimson, dorsal and lateral black spots. Underside: wings as above, subbasal black spot on each wing; body pure white; abdomen with black spots down each side.

Expanse of wings $2\frac{6}{10}$ inches.

Hab. Babber Island, south of Ceram.

Amsacta saduca, nov.

♂. Antennæ and palpi black, white beneath; legs yellow, with black stripes; hind tibiæ with white stripes; tarsi black, with white rings; head, thorax, and wings pure white, a faint pinkish line across the base of the head: fore wing with a pinkish costal line; a row of three or four black subbasal spots, one at the upper end of the cell, and a discal row, commencing with three or four in a line from the costa rather near the apex, then obliquely to the middle of the hinder margin, and one or two spots at the hinder angle: hind wing with a large black spot almost closing the end of the cell, and from two to four subterminal spots: abdomen ochreous, with dorsal black stripes and lateral black spots, the ventral segment with a centre black spot. Underside: wings as above; a subbasal black spot on each wing; body pure white.

Expanse of wings $1\frac{1}{2}$ inch.

Hab. Cuddapah, Madras Presidency.

Spotted much as in *A. albistriga*, Walker, xxxi. p. 303 (1864), well figured by Hampson in Phal. iii. p. 330, pl. xlvi. fig. 19 (1901), but the fore wing of that species is pale brown, with longitudinal white stripes.